

# Clover seed production

## - in organic and conventional cropping systems

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### State of the art

White clover (*Trifolium repens* L.) is an important component in grassland mixtures and as a green manure crop. Since Denmark has excellent conditions for white clover seed production and holds the position of the largest producer within the EU emphasis has been placed on developing an organic production of white clover seeds.

Major yield reductions were found to be caused by the white clover seed weevil (*Apion fulvipes* Geoff.) and no region in Denmark was found to be free from this pest. Further investigations showed that the lesser clover leaf weevil (*Hypera nigrostris* Fab.) caused even more damage.

White clover seed crops free of pests have the potential of producing approximately 40% higher seed yield (figure 1), and the yield reduction in organic white clover seed production can largely be explained by insufficient pest control methods.

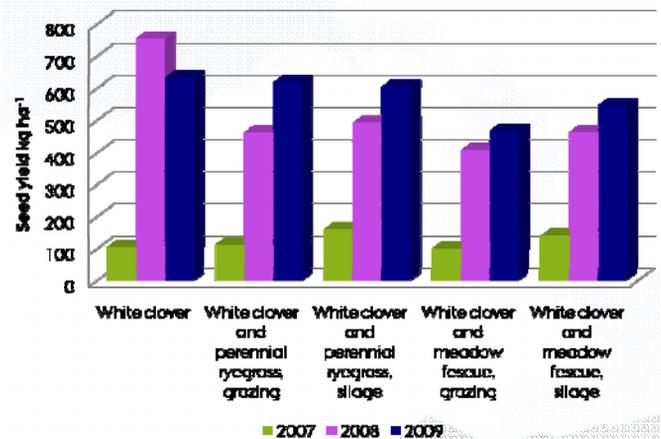


Figure 2. Effect of mixed cropping of white clover and grass (perennial ryegrass or meadow fescue) and two strategies (simulated grazing or a silage cut in spring) on white clover seed yield (kg ha<sup>-1</sup>) in 2007-2009.

### Activities and further perspective

Aarhus University has produced an amazing video illustrating in close details the life cycle of the clover seed weevil (link: [www.agrsci.dk/snudebiller](http://www.agrsci.dk/snudebiller)). In addition a series of experiments have been initiated to reduce the yield reduction from pests. However, none of the experiments have been able to produce seed yields in organic white clover in line with yields in conventional cropping systems. Instead seed growers are recommended to intercrop with grasses to create an alternative use for grazing or a silage cut although the seed yield of white clover is slightly reduced (figure 2).

In 2008 and 2009 the supply of organic white clover has met the demand from the Danish home-market and further organic white clover seed has been available for export. Organic growers have interest in this very specialized production.

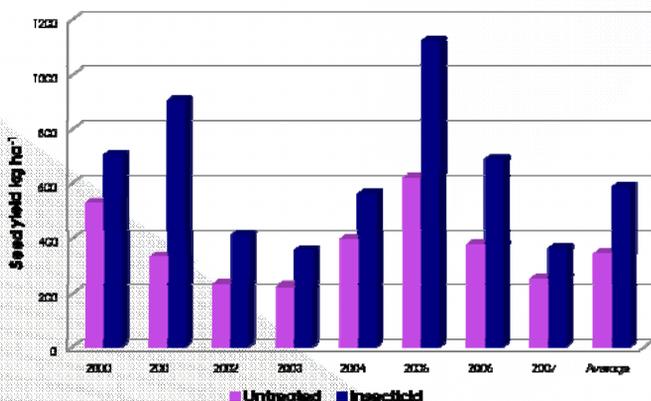


Figure 1. Effect of chemical pest control on seed yield (kg ha<sup>-1</sup>) in white clover compared to an untreated control in 2000-2007.